

1. A loudspeaker comprising a phase uncorrelated diffuse sound source and a duct or wave guide coupled to the sound source to direct acoustic energy from the source, the duct or wave guide having a section of substantially uniform cross-section extending from and beyond the vicinity of the sound source and having a termination positioned remotely from the sound source.

According to ¶ 2 of the final Office Action, the Examiner regards sounding board 4 and transducer 5 (Figs. 1-3) as a sound source; and regards the sound chamber 6 (between sounding boards 3, 4) and the opening 7 in sounding board 3 as a wave guide. The Examiner asserts that the opening 7 is a wave guide section of substantially uniform cross-section extending from and beyond the vicinity of the sound source.

In the disclosed example, Ashworth's sounding boards 3, 4 are spaced apart (by about 2" according to col. 3, line 50), and opening 7 has a length equal only to the thickness of the sounding board 3 (only 3/16" according to col. 3, lines 46-47). Such a short opening cannot simultaneously be said to extend "*from and beyond the vicinity* of the sound source [4, 5] and hav[e] a termination portion positioned *remotely from* the sound source," as recited in claim 1 (emphasis added).

Specifically, the inner edge of opening 7 lies 2" from the sound source (sounding board 4), so this 2" distance apparently is considered by the Examiner to be in "the vicinity" of the sound source. However, the outer edge of the opening 7 lies only 3/16" beyond the inner edge – a mere 9.38% farther from sounding board 4 than the inner edge. If a 2" distance is considered to be in "the vicinity" of sounding board 4, a 2-3/16" distance cannot by any reasonable standard be considered "remote from" the same sounding board.

The attached Declaration of inventor Neil Harris presents a factual analysis of Ashworth's example that makes it abundantly clear that Ashworth's short, wide opening 7 is not a "duct or wave guide" as claimed herein. A duct or wave guide must *constrain* or *guide* the propagation of waves *along a path* defined by the construction of the guide. Decl., ¶ 4. This requires a wave-constraining or wave-guiding structure that is about as long as it is wide, or longer (length : effective diameter = about 1 : 1 or higher). Decl., ¶ 5.

A mere glance at Ashworth's figures reveals that his short, wide opening 7 does not meet this criteria. Mr. Harris calculates the approximate ratio of length : effective diameter for Ashworth's opening 7, and finds that the opening is at least 40 times too shallow to qualify as a duct or wave guide. Decl., ¶ 6. Instead of "*direct[ing]* acoustic energy ... from and beyond the vicinity of the sound source *[to] a termination positioned remotely* from the sound source" as claimed herein, Ashworth's opening 7 merely is a hole or aperture through which the sound escapes, right at the source. Dec., ¶¶ 6, 7.

The Ashworth disclosure thus does not meet each and every limitation of claim 1, so the rejection must be withdrawn.

Applicants respectfully submit that the application is in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

JUN 1 4 2004

Date \_\_\_\_\_

FOLEY & LARDNER LLP  
Washington Harbour  
3000 K Street, N.W., Suite 500  
Washington, D.C. 20007-5143  
Telephone: (202) 672-5300  
Facsimile: (202) 672-5399

By \_\_\_\_\_

Alan I. Cantor  
Attorney for Applicant  
Registration No. 28,163